

REMARKS

The Office Action dated April 5, 2005 (the "Office Action") rejected all pending claims in this application, which included claims 1-29 and originally presented independent claims 1 and 16. Following entry of the present Response and Amendment, claims 1-4, 7-8, 10-19, 22-26 and 28-29 still remain pending in this application.

With regard to prior art, the Office Action rejected claims 1-29 under 35 U.S.C. § 102(e) for allegedly being anticipated by U.S. Patent No. 6,418,467 to Schweitzer et al. (henceforth, "Schweitzer").

In the present Response and Amendment, claims 1 and 16 has been amended to more clearly recite the features of the invention as described throughout Applicant's specification, and claims 5-6, 9, 20-21 and 27 have been cancelled without prejudice. No new matter has been introduced by these amended claims.

Rejections under 35 U.S.C. § 102(e)

The Office Action rejected all claims under sections 102(e) based upon Schweitzer. Insofar as this rejection applies to the claims as presently amended, Applicant traverses as follows.

Claim 1 and 16 have been amended herein to include substantially the limitations of claims 5-6 and 9 and claims 20-21 and 27, respectively, in order to more clearly recite aspects of the present invention. It is believed that these claims, as amended, recite subject matter that is both novel and non-obvious in light of the prior art, as represented by Schweitzer.

In particular, claim 1 recites a computer implemented method for combining usage data from a plurality of network elements, which includes the steps of collecting usage event data records from a plurality of network elements, associating with each event data record a key module identifying usage event data as pertaining to a particular usage session, converting that usage event data records into a normalized format, and aggregating said normalized usage event data records. The usage detail records are then exchanged with downstream elements by converting the usage detail records into an appropriate data output format and distributing them to the downstream elements. Importantly, the claim also further recites that the aggregating of

the normalized data records is accomplished by associating records for related events with one another according to the key modules to form usage detail records. Each said usage detail record includes key module and usage data of a known length for one or more usage event data records pertaining to a same usage session. The claim also recites that the aggregating step employs an in-memory database comprising a hashing table and page files retained in local memory where the page files and hashing table are related according to key modules for the records, and the normalized and aggregated usage event data records are located in said page files.

Similarly, claim 16 further recites a multi-tiered computing architecture containing a front-end component, a core mediation component, and a back end component. The front-end component is adapted to collect usage event data records from a plurality of network elements and convert these usage event data records into a normalized format. Like claim 1, claim 16 recites that the normalized usage event data records have a key module that identifies usage event data as pertaining to a particular usage session. The core mediation component as claimed is adapted to aggregate normalized usage event data records according to their key modules into usage detail records by associating said normalized records for events related to a same usage session. Each usage detail record includes the key module and including usage data of a known length for one or more usage event data records pertaining to a same usage session. Again, like claim 1, it is recited that the aggregating step is performed using an in-memory database having a hashing table and page files retained in local memory, with the page files and hashing table being related according to said key modules, and the normalized and aggregated usage event data records being located in the page files.

Claims 1 and 16 as presently amended find support throughout Applicant's original specification, such as, for example, with respect to the written description portions associated with discussion of FIGs. 7 and 8. As detailed in Applicant's specification, the usage data and state information for every usage session can be kept in a portion of a page file (such as entry node block 803 and the module entry node blocks 804) related in location according to their module key value by a hashing table. Both the hashing table and the entirety of the page file is resident in dynamic memory (as opposed to persistent storage, such as a hard disk). During initialization of a aggregation process, the engine loads both the hash table file and database page file directly into memory, thus providing the benefit of increased performance. Likewise,

whenever the database needs to be committed to disk (for backup or power down purposes), these large blocks of memory can be written on a contiguous block of disk space without a pointer conversion taking place. Furthermore, since the data records are hashed and aggregated according to their module keys, a second level of efficiency is obtained.

Schweitzer, however, fully fails to disclose this particular aspect of the invention. While the Office Action refers to column 9 of Schweitzer as describing these data record format (key module and usage data) and aggregation methodology (in-memory hashing table and page files) features, a proper reading of the cited portions of Schweitzer and the reference in total finds that these features are described in the manner as claimed by Applicant. Further, Schweitzer provides no teaching that would motivate one skilled in the art to produce Applicant's invention as presently claimed.

While Schweitzer describes the possibility that "record flows" can be "indexed" in its central database, it provides no teaching whatsoever on how to index the records, let alone any indication that the indexing be achieved with a hashing table and page files contained resident in memory (as claimed), nor any indication that the records, hashing table and page files be related by a particular key module (as claimed). As taught in Applicant's specification, these features provide significant performance advantages, and thus technically and patentably distinguishes the claimed invention over the prior art.

In this regard, the present claims are allowable over all the prior art made of record in the Office Action, and reconsideration is respectfully requested.

Application Serial No. 10/032,704
Response and Amendment, filed September 6, 2005
In reply to Office Action dated April 5, 2005

Conclusion

In view of the foregoing, the Applicants respectfully request that the Examiner reconsider the claims as amended and in light of the above remarks. A timely allowance of all of the pending claims is requested.

Applicants has transmitted this Response concurrently with a transmittal document, which document also serves as a Petition for Extension of Time for two (2) month(s). A check in the amount of the extension fee believed due in conjunction with the RCE and this Response and Amendment has been submitted therewith. If the appropriate fee amount has not been identified and specifically submitted with this transmittal document, please charge any additional fees or credit any overpayments to Deposit Account No. 50-1349.


Applicant has not herein increased the number of claims beyond the amount for which "additional claims fees" have been previously paid. Therefore, no additional fees are believed to be due at this time. If there are any other fees due in connection with the filing of this Response, please charge any necessary fees to Deposit Account No. 50-1349.

The Examiner is invited to contact Applicants' undersigned attorneys by telephone to discuss any matters if the Examiner feels such discussions may expedite the progress of the present application toward allowance.

Respectfully submitted,

Dated: September 6, 2005

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